CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.17/KS/BM(QB)/2014-15 02.05.2014

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

CLIENT	:	**Asst. Executive Engineer,** Yeshwanthapura Sub Division, BBMP, Bangalore.
AGENCY	:	**Mr. K. Shivakumar,** Contractor, Bangalore.
NAME OF THE WORK	:	Providing and laying HDPE Water line in Muthyalanagara Block - 1 in J P Park, Ward No.17, BBMP, Bangalore.
REFERENCE	:	EE/RRND/Wo.No/235/2013-14 Dated: 07.02.2014
SOURCE OF LOCATION	:	Hot mix Plant, Bangalore
DATE OF TESTING	:	02.05.2014

The results of the tests conducted on the bitumen sample.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	IS :1203 -1978 (RA-2009)	66	60 to 70
2	Softening point, ^{0}C	IS :1205 -1978 (RA-2009)	47	Min. 45
3	Ductility at 27^{0}C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 50
4	Flash Point, ^{0}C	IS :1209 -1978 (RA-2009)	300	Min. 220

Note:

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02.05.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Yeshwanthapura Sub Division, BBMP, Bangalore.
Agency	**Mr. K. Shivakumar,** Contractor, Bangalore.
Name of the Work	Providing and laying HDPE Water line in Muthyalanagara Block - 1 in J P Park, Ward No.17, BBMP, Bangalore.
Reference	EE/RRND/Wo.No/235/2013-14 Dated: 07.02.2014
Source / Location	Hotmix Plant, Bangalore
Type of Mix	Bituminous Macadam
Date of Testing	02.05.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	380	382	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	79	80	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	302	
4	Aggregate Impact value = percent fines	20.79	20.94	
	100* (W_2/W_1)%			20.87

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Macadam is 30%

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Source / Location	Hotmix Plant, Bangalore
Type of Mix	Bituminous Macadam
Date of Testing	02.05.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	389	390	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	304	304	
4	Aggregate Impact value = percent fines	21.85	22.05	
	100* (W_2/W_1)%			21.95

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Macadam is 30%

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DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Asst. Executive Engineer,** Yeshwanthapura Sub Division, BBMP, Bangalore.
Agency	: **Mr. K. Shivakumar,** Contractor, Bangalore.
Name of Work	: Providing and laying HDPE Water line in Muthyalanagara Block - 1 in J P Park, Ward No.17, BBMP, Bangalore.
Reference	: EE/RRND/Wo.No/235/2013-14 Dated: 07.02.2014
Technical Reference	: IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	: Bituminious Macadum
Date of Testing	: 02.05.2014

Flakiness Index = **11.58%**

Elongation Index = **13.80%**

Result : Combined Flakiness & Elongation index **25.38%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Bituminous Macadam is 30%

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DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

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Reference	: EE/RRND/Wo.No/235/2013-14 Dated: 07.02.2014
Technical Reference	: IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	: Bituminious Macadum
Date of Testing	: 02.05.2014

Flakiness Index = **12.10%**

Elongation Index = **13.98%**

Result : Combined Flakiness & Elongation index **26.08%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Bituminous Macadam is 30%

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